

WHAT IS CLAIMED IS:

1. A network interface comprising:

a plurality of physical layer devices (PHYs), each configured for communicating network data to a link partner according to one of an autonegotiation protocol with the corresponding link partner and prescribed configuration information from a shared management data bus;

- 5 a plurality of network interface devices (NIDs), each NID respectively corresponding to one of the PHYs, and each NID having a media access controller (MAC), with at least one of the NIDs configured as a master NID for communicating configuration information between the PHYs and a configuration source;

10 a shared management data bus coupling together each of the PHYs and to which the master NID is coupled, the shared management data bus carrying the prescribed configuration information and autonegotiation results; and

a configuration source coupled to the NIDs, the configuration source configured to receive the autonegotiation results from each PHY through the master NID and send MAC configuration information to the MAC in each of the NIDs to configure the MAC of each NID in accordance with the autonegotiation results for the corresponding PHY.

2. The network interface system of claim 1, wherein the plurality of PHYs are incorporated into a single chip.

- 20 3. The network interface system of claim 2, further comprising management data input/output (MDIO) logic on the single chip for supplying the prescribed configuration information to a PHY based on address information included with the prescribed configuration information, wherein the MDIO logic is coupled between the shared management data bus and the master NID.

4. The network interface system of claim 3, further comprising a data bus that couples the NIDs to the configuration source, and wherein the configuration source is a central processing unit which provides the prescribed configuration information.

- 25 5. The network interface system of claim 3, further comprising a serial interface that couples the NIDs to the configuration source, and wherein the configuration source is an electronically erasable programmable read only memory (EEPROM) configured for storing the prescribed configuration information.

- 30 6. The network interface system of claim 1, wherein the autonegotiation results include pause ability of the link partner of the PHY.

7. The network interface system of claim 3, wherein each MAC further comprises a register configured to store the MAC configuration information.

8. The network interface system of claim 1, wherein the MAC configuration information includes pause ability of the MAC.

5 9. The network interface system of claim 1, wherein the pause ability of the MAC is controlled by a negotiate pause ability (NPA) bit and a force pause ability (FPA) bit in the MAC configuration information, the setting of the FPA bit enabling the pause ability of the MAC regardless of a pause ability state of the link partner of the corresponding PHY of the MAC, the setting of the NPA bit and non-setting of the FPA bit enabling the pause ability of the MAC only if the
10 autonegotiation results indicate that the link partner of the corresponding PHY of the MAC supports pause ability, and non-setting of the NPA bit and the FPA bit disabling the pause ability of the MAC.

10. A method for configuring network interface devices, comprising:
configuring a plurality of physical layer devices (PHYs), each PHY communicating network data to a link partner according to one of an autonegotiation protocol with the corresponding link partner and prescribed configuration information from a shared management data bus;
receiving at a configuration source autonegotiation results from the PHYs based on autonegotiation of the PHYs with their corresponding link partners;
configuring with the configuration source the individual media access controller (MAC) of each of a plurality of network interface devices (NIDs) based on the autonegotiation results received by the configuration source from the PHYs, each NID corresponding to a respective PHY.
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11. The method for configuring network interface devices as in claim 10, wherein a plurality of PHYs are incorporated into a single chip.

12. The method for configuring network interface devices as in claim 11, further
25 comprising carrying the autonegotiation results and the prescribed configuration information on a shared management data bus that couples together each of the PHYs.

13. The method for configuring network interface devices as in claim 12, further comprising configuring at least one of the NIDs as a master NID, coupling the master NID between the shared management data bus and the configuration source, and directing all autonegotiation results and
30 all prescribed configuration information through the master NID.

14. The method for configuring network interface devices as in claim 13, further comprising providing management data input/output (MDIO) logic on the single chip and coupled between the master NID and the shared management data bus, the MDIO logic supplying the prescribed configuration information to a PHY based on address information included with the prescribed configuration information.

15. The method for configuring network interface devices as in claim 14, wherein the prescribed configuration information comprises speed, type of link and pause ability bit settings.

16. The method for configuring network interface devices as in claim 15, wherein the configuring of the MAC of an NID includes setting the pause ability of the MAC, including storing MAC configuration information in a storage register of the NID.

17. The method for configuring network interface devices as in claim 16, wherein the MAC configuration information includes the pause ability of the MAC, and the storing of the MAC configuration information includes setting and disabling a negotiate pause ability (NPA) bit and a force pause ability (FPA) bit, the setting of the FPA bit enabling the pause ability of the MAC regardless of a pause ability state of the link partner of the corresponding PHY of the MAC, the setting of the NPA bit and non-setting of the FPA bit enabling the pause ability of the MAC only if the autonegotiation results indicate that the link partner of the corresponding PHY of the MAC supports pause ability, and non-setting of the NPA bit and the FPA bit disabling the pause ability of the MAC.